

## HSFO

Version number: 1.0

Date of compilation: 2021-12-03

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name **HSFO**  
 Registration number (REACH) not relevant

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses Fuels

#### 1.3 Details of the supplier of the safety data sheet

ORIM ENERGY  
 INTERNATIONAL LTD  
 Telephone: +31164820390  
 e-mail: info@orim-energy.com  
 Website: www.orim-energy.com

#### 1.4 Emergency telephone number

Emergency information service +31164820390  
 This number is only available during the following office hours:  
 Mon-Fri 09:00 - 17:00

Poison centre		
Country	Name	Telephone
United Kingdom	National Poisons Information Service (NPIS) (medical professionals only)	0344-8920111
United Kingdom	NHS (general public)	non-emergency: 111 or a doctor; emergency: 999

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.10	acute toxicity (oral)	4	Acute Tox. 4	H302
3.11	acute toxicity (inhal.)	4	Acute Tox. 4	H332
3.2	skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.5	germ cell mutagenicity	1B	Muta. 1B	H340
3.6	carcinogenicity	1B	Carc. 1B	H350
3.7	reproductive toxicity	2	Repr. 2	H361d
3.9	specific target organ toxicity - repeated exposure	1	STOT RE 1	H372
3.10	aspiration hazard	1	Asp. Tox. 1	H304
4.1A	hazardous to the aquatic environment - acute hazard	1	Aquatic Acute 1	H400
4.1C	hazardous to the aquatic environment - chronic hazard	1	Aquatic Chronic 1	H410

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For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure. Spillage and fire water can cause pollution of watercourses.

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- signal word danger

- pictograms  
GHS07, GHS08,  
GHS09



- hazard statements

H302+H332	Harmful if swallowed or if inhaled.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H340	May cause genetic defects.
H350	May cause cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

- precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTRE/doctor if you feel unwell.
P331	Do NOT induce vomiting.
P391	Collect spillage.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- hazardous ingredients for labelling Fuel oil, residual; High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)

### 2.3 Other hazards

This material is combustible, but will not ignite readily.

H2S WARNING:

Product may release hydrogen sulphide: A specific assessment of inhalation risks due to the presence of hydrogen sulphide in the airspace of tanks, enclosed spaces, product residues, tank waste, waste water and accidental releases must be made to re-cord control measures according to local conditions. These checks include: room separation, access only for authorized persons, permits, work procedures in closed rooms, H2S alarm for rooms, H2S alarm for people, rescue sets, H2S information training.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not relevant (mixture)








### 3.2 Mixtures

The product does not contain any (other) ingredients which are classified according to present knowledge of the supplier and contribute to the classification of the product and hence require reporting in this section.

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Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes	Specific Conc. Limits	M-Factors
Fuel oil, residual	CAS No 68476-33-5  EC No 270-675-6  Index No 649-024-00-9  REACH Reg. No 01- 2119474894 -22-xxxx	10 – < 90	Acute Tox. 4 / H332 Carc. 1B / H350 Repr. 2 / H361d STOT RE 2 / H373 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 EUH066	  	IOELV		
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	CAS No 64741-47-5  EC No 265-047-3  Index No 649-346-00-X  REACH Reg. No 01- 2119496052 -40-xxxx	10 – < 90	Flam. Liq. 2 / H225 Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Muta. 1B / H340 Carc. 1B / H350 STOT RE 1 / H372 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410	   	GHS-HC P(a)		

### Notes

GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/2008/EC, Annex VI)

IOELV: Substance with a community indicative occupational exposure limit value

P(a): The classification as a carcinogen or mutagen is mandatory. The substance contains at least 0,1 % w/w benzene (EINECS No 200-753-7)

### Remarks

For full text of H-phrases: see SECTION 16. All the percentages given are percentages by weight unless stated otherwise.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

#### Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following skin contact

Wash with plenty of soap and water. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following eye contact

Irrigate copiously with clean, fresh water, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart.

#### Following ingestion

Do NOT induce vomiting. Rinse mouth with water (only if the person is conscious). Call a POISON CENTER or doctor if you feel unwell.

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### 4.2 Most important symptoms and effects, both acute and delayed

Breathing difficulties. Cough. Death following aspiration.

### 4.3 Indication of any immediate medical attention and special treatment needed

For specialist advice physicians should contact the poison centre.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Water mist; Dry extinguishing powder; Carbon dioxide (CO<sub>2</sub>); Foam

Unsuitable extinguishing media

Water jet.

### 5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

During fire hazardous fumes/smoke could be produced.

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal pre-cautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (EN 133). Standard protective clothing for firefighters.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases. Use personal protective equipment as required.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

### 6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Collect spillage: Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

##### Recommendations

- measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

- specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

##### Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Managing of associated risks

- incompatible substances or mixtures

Keep away from alkalis, oxidising substances, acids.

##### Control of effects

##### Protect against external exposure, such as

High temperatures.

##### Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed.

- ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

- packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

#### 7.3 Specific end use(s)

There is no additional information.

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### National limit values

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Notation	Source
EU	hydrogen sulfide	7783-06-4	IOELV	5	7	10	14		2009/161/EU
GB	hydrogen sulfide	7783-06-4	WEL	5	7	10	14		EH40/2005

##### Notation

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

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### Relevant DNELs/DMELs/PNECs and other threshold levels

Relevant DNELs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Fuel oil, residual	68476-33-5	DNEL	4,700 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	acute - systemic effects
Fuel oil, residual	68476-33-5	DNEL	0.065 mg/cm <sup>3</sup>	human, dermal	worker (industry)	chronic - systemic effects
Fuel oil, residual	68476-33-5	DNEL	0.12 mg/cm <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
Fuel oil, residual	68476-33-5	DNEL	0.015 mg/cm <sup>3</sup>	human, oral	worker (industry)	chronic - local effects
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	DNEL	3.25 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	DNEL	23.4 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Fuel oil, residual	68476-33-5	PNEC	66.7 mg/kg	aquatic organisms	water	short-term (single instance)

## 8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection (EN 166).

Skin protection

Protective clothing (EN 340 & EN ISO 13688).

- hand protection



Wear suitable gloves. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Chemical protection gloves are suitable, which are tested according to EN 374. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- type of material

Nitrile rubber

- material thickness

≥ 0,38 mm

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- breakthrough times of the glove material

Use gloves with a minimum breakthrough times of the glove material: >480 minutes (permeation: level 6).

- other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Wash hands thoroughly after handling.

Respiratory protection



In case of inadequate ventilation wear respiratory protection. Full face mask/half mask/quarter mask (EN 136/140). When heat-ing the product.. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

##### Appearance

Physical state	liquid
Colour	various
Odour	characteristic

##### Other safety parameters

pH (value)	not determined
Melting point/freezing point	-29 °C at 101.3 kPa
Initial boiling point and boiling range	114 °C at 101.3 kPa calculated value
Flash point	70 °C (ISO 3719) calculated value
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)

##### Explosive limits

- lower explosion limit (LEL)	0.5 vol%
- upper explosion limit (UEL)	5 vol%

Vapour pressure	10,100 Pa at 20 °C calculated value
Density	0.9373 g/cm <sup>3</sup> at 15 °C
Vapour density	this information is not available
Solubility(ies)	not determined

##### Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	>250 °C calculated value

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### Viscosity

- kinematic viscosity	255.1 cSt at 50 °C (ISO 3104) calculated value
- dynamic viscosity	239.1 cP
Explosive properties	none
Oxidising properties	none

### 9.2 Other information

There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

See below "Conditions to avoid".

### 10.3 Possibility of hazardous reactions

No known hazardous reactions.

### 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

### 10.5 Incompatible materials

Acids. Bases. Oxidisers.

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Test data are not available for the complete mixture.

#### Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

#### Classification according to GHS (1272/2008/EC, CLP)

##### Acute toxicity

Harmful if swallowed. Harmful if inhaled.

##### - acute toxicity estimate (ATE)

Exposure route	ATE
Oral	1,484 mg/kg
Inhalation: vapour	16.59 mg.l/4h



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### - acute toxicity of components of the mixture

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
Fuel oil, residual	68476-33-5	inhalation: vapour	11 mg/l/4h
Fuel oil, residual	68476-33-5	inhalation: dust/mist	4.1 mg/l/4h
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	oral	500 mg/kg

Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Fuel oil, residual	68476-33-5	oral	LD50	5,270 mg/kg	rat
Fuel oil, residual	68476-33-5	inhalation: dust/mist	LC50	4,100mg/m <sup>3</sup> /4h	rat
Fuel oil, residual	68476-33-5	dermal	LD50	>2,000 mg/kg	rabbit
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	oral	LD50	>5,000mg/kg	rat
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	inhalation: vapour	LC50	28.1 mg/l/4h	rat
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	dermal	LD50	>2,000mg/kg	rabbit

### Skin corrosion/irritation

Causes skin irritation.

### Serious eye damage/eye irritation

Causes serious eye irritation.

### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

### Germ cell mutagenicity

May cause genetic defects.

### Carcinogenicity

May cause cancer.

### Reproductive toxicity

Suspected of damaging the unborn child.

### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

### Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Hazard category	Target organ	Exposure route
2	blood	if exposed
2	liver	if exposed
2	thymus	if exposed

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### Aspiration hazard

May be fatal if swallowed and enters airways.

## SECTION 12: Ecological information

### 12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Fuel oil, residual	68476-33-5	LL50	79 mg/l	fish	96 h
Fuel oil, residual	68476-33-5	EL50	0.22 mg/l	aquatic invertebrates	48 h
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	LL50	1.1 mg/l	fish	96 h
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	LC50	1 mg / l	fish	96 h
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	EC50	1.2 mg/l	aquatic invertebrates	48 h
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	EL50	3.3 mg / l	aquatic invertebrates	48 h
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	ErC50	2 mg/l	algae	72 h
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	EbC50	0.91 mg/l	algae	96 h
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	NOEC	0.12 mg/l	algae	96 h

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Fuel oil, residual	68476-33-5	EL50	2.56 mg/l	aquatic invertebrates	24 h

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### 12.2 Persistence and degradability

Degradability of components of the mixture						
Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5	oxygen depletion	29 %	28 d		ECHA

### 12.3 Bioaccumulative potential

Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Fuel oil, residual	68476-33-5		3 – 6	
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	64741-47-5		2.2 – 6.5 (pH value: 6.2, 23 °C)	

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

### 12.6 Other adverse effects

Data are not available.

Endocrine disrupting potential

None of the ingredients are listed.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

#### Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

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### SECTION 14: Transport information

<b>14.1 UN number</b>	3082
<b>14.2 UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name (Hazardous ingredients)	Fuel oil, residual, High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)
<b>14.3 Transport hazard class(es)</b>	
Class	9 (environmentally hazardous)
<b>14.4 Packing group</b>	III (substance presenting low danger)
<b>14.5 Environmental hazards</b>	hazardous to the aquatic environment
Environmentally hazardous substance (aquatic environment)	Fuel oil, residual, High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)
<b>14.6 Special precautions for user</b>	
Provisions for dangerous goods (ADR) should be complied within the premises.	
<b>14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code</b>	
No data available.	

#### Information for each of the UN Model Regulations

##### **Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)**

UN number	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class	9
Classification code	M6
Packing group	III
Danger label(s)	9, fish and tree
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	274, 335, 375, 601
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
Transport category (TC)	3
Tunnel restriction code	-
(TRC) Hazard identification	90
No Emergency Action Code	3Z

##### **International Maritime Dangerous Goods Code (IMDG)**

UN number	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class	9
Marine pollutant	yes (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	9, fish and tree

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Special provisions (SP)	274, 335,
Excepted quantities (EQ)	969 E1
Limited quantities (LQ)	5 L F-A,
EmS	S-F
Stowage category	A

### International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	3082
Proper shipping name	Environmentally hazardous substance, liquid,
Class	n.o.s. 9
Environmental hazards	yes (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	9, fish and tree



Special provisions (SP)	A97, A158, A197
Excepted quantities (EQ)	E1
Limited quantities (LQ)	30 kg

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Relevant provisions of the European Union (EU)

#### Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)				
Name of substance	Name acc. to inventory	CAS No	Restriction	No
HSFO	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		R3	3
Fuel oil, residual	carcinogenic		R28-30	28
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	carcinogenic		R28-30	28
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	germ cell mutagenic (mutagenic)		R28-30	29
High benzene naphthas (flash point <23; initial boiling point >35; benzene >10%; naphthalene >25%)	flammable / pyrophoric		R40	40

#### Legend

- R28-30 1. Shall not be placed on the market, or used,  
 - as substances,  
 - as constituents of other substances, or,  
 - in mixtures,  
 for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:  
 - either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,  
 - the relevant concentration specified in Directive 1999/45/EC where no specific concentration limit is set out in Part 3 of Annex VI to Regulation (EC) No 1272/2008.  
 Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is

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### Legend

- marked visibly, legibly and indelibly as follows: 'Restricted to professional users'.
2. By way of derogation, paragraph 1 shall not apply to:
- medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
  - cosmetic products as defined by Directive 76/768/EEC;
  - the following fuels and oil products:
    - motor fuels which are covered by Directive 98/70/EC,
    - mineral oil products intended for use as fuel in mobile or fixed combustion plants,
    - fuels sold in closed systems (e.g. liquid gas bottles);
  - artists' paints covered by Directive 1999/45/EC;
  - the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date.
- R3**
- Shall not be used in:
    - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ash-trays,
    - tricks and jokes,
    - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
  - Articles not complying with paragraph 1 shall not be placed on the market.
  - Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
    - can be used as fuel in decorative oil lamps for supply to the general public, and,
    - present an aspiration hazard and are labelled with R65 or H304,
  - Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
  - Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
    - lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010, 'Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage';
    - grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life threatening lung damage';
    - lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
  - No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.
  - Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.
- R40**
- Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
    - metallic glitter intended mainly for decoration,
    - artificial snow and frost,
    - 'whoopee' cushions,
    - silly string aerosols,
    - imitation excrement,
    - horns for parties,
    - decorative flakes and foams,
    - artificial cobwebs,
    - stink bombs.
  - Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: 'For professional users only'.
  - By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC (2).
  - The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

### List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

None of the ingredients are listed.

### Seveso Directive

2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements		Notes
E1	environmental hazards (hazardous to the aquatic environment, cat. 1)	100	200	56)

### Notation

56) hazardous to the Aquatic Environment in category Acute 1 or Chronic 1

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### Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

None of the ingredients are listed.

### Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

None of the ingredients are listed.

### Regulation 98/2013/EU on the marketing and use of explosives precursors

None of the ingredients are listed.

## 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

## SECTION 16: Other information

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2009/161/EU	Commission Directive establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
Asp. Tox.	Aspiration hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
Carc.	Carcinogenicity
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EbC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits ( <a href="http://www.nationalarchives.gov.uk/doc/open-government-licence/">http://www.nationalarchives.gov.uk/doc/open-government-licence/</a> )
EINECS	European Inventory of Existing Commercial Chemical Substances
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ELINCS	European List of Notified Chemical Substances

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

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Abbr.	Descriptions of used abbreviations
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
log KOW	n-Octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
Muta.	Germ cell mutagenicity
NLP	No-Longer Polymer
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.	Reproductive toxicity
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STEL	Short-term exposure limit
STOT RE	Specific target organ toxicity - repeated exposure
SVHC	Substance of Very High Concern
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit



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### Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (ad-ditivity formula).

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.